MEGAFLASHROM SCC+ SD

USER'S MANUAL

[DESCRIPTION]

MegaFlashROM SCC+ SD is a combo cartridge with a SD card reader, an improved MegaFlashROM SCC+ and 512K RAM (optional)

Each device is located in a subslot, so the cartridge must be inserted in a primary slot. It will not work in a slot expander.

OPFXSD is the software you must use to operate the cartridge. You can find it in the "FLASH" section of:
www.msxcartridgeshop.com

[MINIMUM REQUIREMENTS]

- MSX computer with at least one free Slot
- 64K RAM (MSX-DOS, FAT12, 16MB partitions) or 128K (MSX-DOS 2/Nextor, FAT16, up to 4GB partitions)

[FEATURES]

- 8192 KB (64 Mbits) flashROM memory
- Sound chips: SCC-I and PSG
- Mapper: ASC8, ASC16, Konami, Konami SCC, linear 48K/64K
- Compatible with microSD/SDHC cards in FAT12 or FAT16
- Two micro SD slots
- High transfer speed.
- Recovery mode: Let's you configure the cartridge easily.

[WORKING]

Insert the **MegaFlashROM SCC+ SD** cart in one slot while the computer is turned off.
Turn the computer on and the disk operative system will boot. If you need to reinstall the cartridge software check ***INSTALATION*** section.

[MSX with 128K RAM or more]

With this configuration you can use **Nextor** (MSX-DOS 2), **FAT16** and partitions up to **4 GB**.
When using an **MSX2** or higher, **MultiMente** –a file explorer- will boot automatically. It is installed by default in the ROM disk of the cartridge. Check **MULTIMENTE** section.

[MSX with less than 128K RAM]

With this configuration you can't use Nextor or MultiMente, only **MSX-DOS 1**, **FAT12** and partitions up to **16 MB**.

Execute **OPFXSD** from command line by selecting the ROM or DSK and needed options.

[After flashing the cartridge]

Once the ROM is stored the cartridge will behave as if it were the original one and won't be erased even if the computer is turned off.

ESC key or the one configured through **/T** option must be pressed while computer is booting to avoid the execution of the game.

If it doesn’t work, you can erase the cartridge using the **recovery mode**. Press **CURSOR UP** while booting and select **F1** option.

RESET key can be hold on pressed for **5 seconds** to disable MegaFlashROM SCC+ temporarily if previous system would fail for any reason.

[PSG]

The PSG included in the cartridge is mapped to ports #10-#12.

Internal MSX PSG	MegaFlashROM PSG
Port #A0	Port #10
Port #A1	Port #11
Port #A2	Port #12

[NEXTOR]

You can find detailed information, latest versions and tools at: **http://www.konamiman.com/msx/msx-e.html#nextor**

[Boot keys]

The boot time configuration of Nextor can be modified by keeping pressed some special keys while the system is booting.

These keys and their behavior are:

1: Force boot in MSX-DOS 1 mode (TR: Z80 mode).

2: Force boot in MSX-DOS 1 mode (TR: R800 mode).

3: Force boot to the BASIC prompt.

4: (Turbo R only) Boot in R800-ROM mode, assign the largest mapper found as the primary mapper and free the 64K allocated for the R800-DRAM mode.

CTRL: Assign only one drive to each Nextor kernel with a device-based driver.

SHIFT: Prevent MSX-DOS kernels from booting. This isuseful to disable the internal floppy disk drive.

R: Disable Nextor when the cartridge is in slot 1.

F: Disable Nextor when the cartridge is in slot 2.

[MultiMente]

MultiMente is a file explorer/shell that works on **MSX2** or higher with at least **128K RAM**. It allows to load ROMs and DSK easily into the cartridge without using **OPFXSD** from command line.

[Basic keys]

Q: Exit

Cursors: Navigate

SPACE: Select file

1-9: Change current drive letter (1 = A:, 2 = B:…)

RETURN: Depends on the selected file/folder.

- **Folder:** Enter folder.
- **.ROM:** Load the ROM in the cartridge.
- **.DSK:** Load the DSK in the cartridge as disk 1.
- **.FD1 to .FD9:** Load the file as disk 1 to 9.
- **.OPF:** Load a multiROM file.

BS: Exit current folder (similar to CD..)

C: Copy

D: Delete

SHIFT+RETURN: Install MGSDRV.

CTRL+RETURN: Install MicroCabin BGM driver.

[OPTIONS]

/X	Executes the game stored in the cartridge. **OPFXSD KLORE2.ROM /X** <- Stores the ROM and executes it **OPFXSD /X** <- Executes whatever is stored in the cartridge
/E	Patchs Konami ROMs to simulate that they are executed in an European computer **OPFXSD USAS.ROM /E** <- Shows the texts in English in a Japanese computer
/J	Patchs the Konami ROMs to simulate that they are executed in a Japanese computer **OPFXSD NEMESIS3.ROM /J** <- Shows the texts in Japanese in an European computer
/8	Enables the R800 CPU when executing the ROM or turbo mode of Panasonic WX/WSX/FX models.
/Hxx	Changes the Frequency when executing the ROM. It won't have any effect if the game change it again during its execution. **/H50** <- 50 Hz **/H60** <- 60 Hz
/RCxx	Simulates a Konami cart inserted in another slot. **OPFXSD NEMESIS2.ROM /RC743**<-Simulates Penguin Adventure
/Kx	Forces the execution of the ROM with a Konami mapper **/K4** <- Konami **/K5** <- Konami SCC
/Ax	Forces the execution of the ROM with a ASCII mapper

	/A8 <- ASC8 **/A16** <- ASC16
/L	Indicates that the ROM has no mapper and works in #0000-#FFFF area as 48K or 64K roms.
/M	Manual mode. OPFXSD won't indentify the ROM mapper automatically.
/C	Erases the ROM stored in MegaFlashROM SCC+. **/C1** Fully erases the cartridge (MegaFlashROM and SD kernel)
/Sxx	Forces the slot where the cartridge is placed: /S1 = Slot 1 /S13 = Slot 1, subslot 3
/T[rc]	Fixes the key which will avoid the execution of the ROM stored in the cartridge. **ESC** acts in that way by default. To select the desired key it is necessary to select the file and column of the key matrix **/T64** <- File 6, Column 4 = CODE **/T82** <- File 8, Column 2 = INS ***[See keyboard matrices]***
/N	Inverts the logic of the key that avoids the execution of the ROM (Pressed / Not pressed)
/O	Creates a MULTIROM with the games inside the MULTIROM.OPF file ***[See MULTIROM section]***
/F	Executes the game by using a "soft reset”.
/P	Patchs a Konami ROM to use the PSG of the cartridge. So the sound balance of SCC and PSG is constant and perfect. **/P1** Clone internal PSG using the external one.

/Dx	Loads a DSK (x=1 to 9) ***[See DSK]***
/I	Installs cartridge's software ***[See INSTALATION]***
/U	Disables subslots and set MegaFlashROM SCC+ as unique device available.
/1	Write the ROM at x1 speed instead of x4.

[KEYBOARD MATRICES]

International:

	7	6	5	4	3	2	1	0
0	7 &	6 ^	5 %	4 $	3 #	2 @	1 !	0)
1	; :	] }	[{	\ |	= +	-_	9 (	8 *
2	B	A	DEAD	/ ?	. >	, <	` ~	' "
3	J	I	H	G	F	E	D	C
4	R	Q	P	O	N	M	L	K
5	Z	Y	X	W	V	U	T	S
6	F3	F2	F1	CODE	CAPS	GRAPH	CTRL	SHIFT
7	RET	SELECT	BS	STOP	TAB	ESC	F5	F4
8	→	↓	↑	←	DEL	INS	HOME	SPACE
9	NUM4	NUM3	NUM2	NUM1	NUM0	NUM/	NUM+	NUM*
10	NUM.	NUM,	NUM-	NUM9	NUM8	NUM7	NUM6	NUM5

Japanese:

	7	6	5	4	3	2	1	0
0	7 '	6 &	5 %	4 $	3 #	2 "	1 !	0
1	; +	[{	@ `	¥ |	^ ~	-=	9)	8 (
2	B	A	_	/ ?	. >	, <	] }	: *
3	J	I	H	G	F	E	D	C
4	R	Q	P	O	N	M	L	K
5	Z	Y	X	W	V	U	T	S
6	F3	F2	F1	KANA	CAPS	GRAPH	CTRL	SHIFT
7	RET	SELECT	BS	STOP	TAB	ESC	F5	F4
8	→	↓	↑	←	DEL	INS	HOME	SPACE
9	NUM4	NUM3	NUM2	NUM1	NUM0	NUM/	NUM+	NUM*
10	NUM.	NUM,	NUM-	NUM9	NUM8	NUM7	NUM6	NUM5
11					NO		YES	

Azerty:

	7	6	5	4	3	2	1	0
0	7 è	6 §	5 (	4 '	3 "	2é	1 &	0 à
1	M	$ *	^ ¨	<>	- _	º)	9 ç	8 !
2	B	Q	DEAD	= +	/ :	. ;	# £	Ù %
3	J	I	H	G	F	E	D	C
4	R	A	P	O	N	? ,	L	K
5	W	Y	X	Z	V	U	T	S
6	F3	F2	F1	CODE	CAPS	GRAPH	CTRL	SHIFT
7	RET	SELECT	BS	STOP	TAB	ESC	F5	F4
8	→	↓	↑	←	DEL	INS	HOME	SPACE
9	NUM4	NUM3	NUM2	NUM1	NUM0	NUM/	NUM+	NUM*
10	NUM.	NUM,	NUM-	NUM9	NUM8	NUM7	NUM6	NUM5

Russian:

	7	6	5	4	3	2	1	0
0	& 6	% 5	¤ 4	# 3	" 2	! 1	+ ;	) 9
1	V Ж	* :	H Х	- ^ Ъ	= _	$ 0	(8	' 7
2	I И	F Ф	? /	< ,	@ Ю	B Б	> .	\ Э
3	O O	[{ Ш	R Р	P П	A А	U У	W В	S С
4	K К	J Й	Z З	] } Щ	T Т	X Ь	D Д	L Л
5	Q Я	N Н	| ~ Ч	C Ц	M М	G Г	E Е	Y Ы
6	F3	F2	F1	РУС	CAPS	GRAPH	CTRL	SHIFT
7	RET	SELECT	BS	STOP	TAB	ESC	F5	F4
8	→	↓	↑	←	DEL	INS	HOME	SPACE
9	NUM4	NUM3	NUM2	NUM1	NUM0	NUM/	NUM+	NUM*
10	NUM.	NUM,	NUM-	NUM9	NUM8	NUM7	NUM6	NUM5

Keyboard matrices from UK and Spain are the same as the international one except these rows:

UK:

	7	6	5	4	3	2	1	0
2	B	A	£	/	.	,	`	'

Spanish:

	7	6	5	4	3	2	1	0
1	ñ Ñ	] }	[{	\ |	= +	-_	9 (	8 *
2	B	A	DEAD	/ ?	. >	, <	; :	' "

[INSTALATION]

In case you need to reinstall part of the software, follow these steps.

OPFXSD nextor.rom /I:
Install SD kernel. Needed to use the SD interface.
Note: this process must be done using another storage device different from the SD reader in the cartridge. You can also use **RECOVERY** mode to install the kernel.

OPFXSD dskrom.rom /I1:
Installs the diskROM used to load DSKs. Needed to run DSKs.

OPFXSD romdisk.dsk /ID:
Installs a ROM drive. The ROM drive enables you to put a diskimage into the flashrom. It will be mounted as an extra readonly drive. The ROM drive is always available (unless erased), even when not cards are inserted. It can be used to boot from or store files that you use regularly.

OPFXSD recovery.rom /I34:
Installs **RECOVERY** program.
Note: Update only when the cartridge maker tells you to do it.

[See RECOVERY]

[RECOVERY]

Recovery mode let's you to configure the cartridge in a easy way, without using other disk interfaces.
In order to enter the recovery menú, hold **CURSOR UP** while booting. The available options are:

F1: Erase MegaFlashROM.
This will erase the ROM stored in the MegaFlashROM SCC+. It is useful if the ROM is corrupted and can't be disabled by pressing ESC.

F2: Erase SD kernel
Erasing the SD kernel the SD reader will be disabled and the MSX will not identify it as a disk interface.

F3: Erase ROM disk
Erase the disk image installed as ROM disk (**A:**)

F4: Install SD kernel
Let's you reinstall the SD kernel, so the SD interface will work again. You **must format a SD card** and copy in it KERNEL.DAT file.

F5: Show SD card information
Shows information about the card and its partitions.
Pressing LEFT and RIGHT you can change SD card slot.

N: Disable RAM expansion
Only available in the 512K RAM version.

ESC: Exit recovery menu.

[DSK –flashing method-]

This is the old method for loading DSKs. It has been replaced with the native support of Nextor for DSKs emulation. The new method will be used by default when loading a DSK from MultiMente. Check [DSK from SD] for more information.

A DSK file is a disk image that contains the information of the sectors of a real disk.

It is possible to load and run up to 9 disk images of 720 KB. These files can be loaded and changed independently. It is not necessary to previously erase the former ones. **Since the DSK are stored on flashROM memory, they will be read only**.

In order to load a DSK you must use **/D** option, followed by the number of disk you want to select (from 1 to 9)

In example: **OPFXSD** undead.dsk **/D1**

In games with several disks, you can change the disk by holding the desired number key when the disk is accessed (i.e.: after pressing space after a change disk dialog in a game)

Pressing number 0 the disk access will be redirected to the next disk interface, probably the floppy disk. In this way you can save game data.

Special keys: (hold while booting)

D: Disable other disk interfaces to get more free RAM.
P: Set MSX1 palette in MSX2.
S: Enable SCC/SCC+
R/F: Enable RAM expansion (when available).
W: Discard errors in write operations.

[BOOT KEYS]

There are some special keys to change the computer's configuration when booting.

[F5]: Swap video mode 50Hz <-> 60Hz

[F4]: Enable turbo mode. On turbo R it will enable the R800. On some Panasonic machines it will enable the turbo mode (5.37 MHz)

Bear in mind that the new configuration can be changed again by the computer BIOS or the game/software loaded in the cartridge.

[DSK new]

This new method loads the DSKs directly for the SD card. No need to flash them in the cartridge. So it is possible to read and write to them.

The disk image files must not be fragmented, that is, their contents must be placed across consecutive sectors in the device.

In order to switch to a different DSK, you must press the appropriate key (1-9) while the computer is trying to read the file; this will emulate a disk change.

Alternatively, you can also press the GRAPH key when the computer is trying to read the file. The caps led will lit and the computer will freeze until you release GRAPH and press the appropriate DSK number.

Nextor will boot in disk emulation mode if it finds a file named **NEXT_DSK.DAT** in the root directory of a primary partition. This file is created when you press **RETURN** on a .**DSK** or .**FD1**….**FD9** file

To disable the disk emulation mode (that is, to boot normally even if a NEXT_DSK.DAT file exists), keep the **0 (zero)** key pressed while the computer boots. You will have to manually delete or rename the NEXT_DSK.DAT file to prevent the disk emulation mode to be entered again in the next system boot.

[MULTIROM]

It is possible to put several games into the cartridge at the same time, as many as they fit in the cartridge's memory, up to 511.

In order to create a multiROM, you need to make a plain-text file, with the file names to load.

Each file name must be in a text line and it is possible to set the mapper type after the name.

Add at the end of the list the keyword **[END]**.

In order to pause the loading process you can use **[PAUSE]**.

Once this file is ready, you need to process the list using the option **/O**. If you don't specify a multiROM file, MULTIROM.OPF will be used by default.

The ROMs to load must be in the same path that OPFXSD and multiROM file.

Example of MULTIROM.OPF content:

GALIOUS.ROM /K4
HERO.ROM
PENGUIN.ROM
KLORE2.ROM
[END]

Command to make the multiROM using the default MULTIROM.OPF file:
OPFXSD /O

Command to make the multiROM specifying the multiROM file:
OPFXSD FILENAME.EXT /O

After booting the cartridge a menu will be show with the games in the cartridge. Before running the game it is possible to change the video and CPU modes.

Controls:

Cursor keys / Joystick	Move
Space / Fire	Select
TAB / Fire 2	Enter / Exit configuration
ESC	Exit multiROM

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